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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/022,837

12/20/2001

Russ Bown

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09/22/2004

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

DANG, HUNG Q

ART UNIT

PAPER NUMBER

2635

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,837

Applicant(s)

BOWN, RUSS

Examiner

Hung Q Dang

Art Unit

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.5.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-4, 6-9 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima U.S. Patent 6,342,831 in view of Louis U.S. Patent 5,212,473 .

Regarding claim 1, Azima teaches an apparatus comprising a bending wave panel loudspeaker having a bending wave panel defining a surface and an electro-acoustic transducer attached to the bending wave panel to excite bending waves in the panel to produce an acoustic output, an input device (figure 1, units 8) forming part of the surface (abstract and column 1 lines 29-53).

However, Azima does not specifically teach means for providing force feedback to the input device. One skilled in the art would recognize that force feedback has been commonly provided in input devices in order to provide a tactile indication to the user that the key has been actuated, as evidenced by Louis.

Louis teaches an input device, which includes means for providing force feedback to the input device in order to provide a tactile indication to the user that the key has been actuated (column 6, lines 6-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide means for providing force feedback to the input

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device disclosed by Azima, as evidenced by Louis, in order to give a tactile indication to the user that the key has been actuated.

Regarding claim 2, Louis also teaches a transducer (Figure 4, unit 74a) providing pulses (Figure 4, unit 72 generates pulses) to generate a force feedback. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a (second) transducer providing pulses to the panel disclosed by Azima in order to provide a force feedback to key inputs, as evidenced by Louis.

Regarding claim 3, as mentioned above, Azima in view of Louis teaches a transducer for generating an acoustic output and a transducer for generating a force feedback, wherein the force feedback in the form of pulses to the panel. However, Azima in view of Louis does not teach a **single transducer** which generates **both** acoustic output and force feedback. One skilled in the art would recognize that using one transducer to generate both the acoustic output and the force feedback instead of using two transducers to perform the same functions to reduce the size of the apparatus would have been obvious. (see MPEP 2144.04 In re Larson design engineering choice and MPEP 2144.04 changes in size/proportion)..

Regarding claim 4, the specification does not provide support for the claimed limitation "wherein the pulses are in the form of a transient spike". Examiner's understanding of a spike is similar as a pulse. Therefore, claim 4 is rejected for the same reasons as claim 2.

Regarding claim 6, Louis also teaches locally heating the region of the input device to provide tactile feedback (column 9, lines 55-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide heating the region of the input device disclosed by Azima, as evidenced by Louis, in order to provide tactile feedback to indicate a key has been actuated.

Regarding claims 7 and 9, Azima also suggests a visual display associated with the bending wave panel (column 2, lines 4-6).

Regarding claim 8, even though Azima in view of Louis does not specifically teach said panel being transparent and the visual display device is mounted behind the transparent part of the panel, however, one skilled in the art would recognize that mounting a display behind a transparent panel have been very commonly done in order to protect the display from getting scratched and damaged (as indicated on page 2 lines 1-3 of the background of the invention).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a transparent panel to the apparatus disclosed by Azima in view of Louis in order to protect the display from getting damaged.

Regarding claim 12, as indicated on page 10 lines 4-6 of the specification "the panel **optionally** comprises chromatic characteristics in the form of a semi-reflecting chromatic layer 71". Clearly, there is no criticality or functionality of providing chromatic characteristic to said panel. It is merely a choice in design for decorative purposes.

Regarding claim 14, the input device disclosed by Azima is also a touch-sensitive input device (column 2 lines 54-59).

Regarding claim 15, even though Azima in view of Louis does not teach said panel having a plurality of loudspeaker regions for producing multi-channel sound, however, one of ordinary skill in the art would recognize that providing a multi-channel sound to speaker-devices has been commonly done so that sound can be simultaneously generated from many regions of a device. Therefore, by conventionality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide multi-channel speakers to different regions of the apparatus disclosed by Azima in view of Louis.

Regarding claim 16, Azima also teaches a keyboard on the panel surface (Figure 1, units 8 form a keyboard).

Regarding claim 13, manual adjusting the sound level coming out of a speaker has been commonly done. Therefore, by conventionality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide sound-level adjustment to the acoustic output of the apparatus disclosed by Azima in view of Louis so that the user would be able to adjust the level of sound coming out of the speaker.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Azima U.S. Patent 6,342,831 in view of Louis U.S. Patent 5,212,473 and in further view of Rutten U.S. Patent 5,561,278.

Regarding claim 5, as mentioned above, Azima in view of Louis teaches an apparatus as claimed in claim 1. However, Azima in view of Louis does not teach means for providing force feedback in the form of non-linearly deflecting panel mounts.... for producing a sensation of a button click when a portion of the panel is pressed.

As described in first and second paragraph of page 9 of the specification and figure 3, then the "means for providing force feedback in the form of non-linearly deflecting panel mounts.... for producing a sensation of a button click when a portion of the panel is pressed" is merely composed of two resilient and non-linear elements (47 and 49) such that force feedback and a sensation of a button click would be provided by said resilient elements when a portion of the panel is pressed.

Rutton teaches an input device, which includes means for providing force feedback in the form of non-linearly deflecting components (Figure 2, column 5 lines 45-64) for producing a sensation of a button click when a portion of the panel is pressed

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide said non-linearly deflecting panel, as indicated above, to the input device disclosed by Azima in view of Louis, as evidenced by Rutten, in order to provide force feedback and sensation of a button click when a portion of the panel is pressed.

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azima U.S. Patent 6,342,831 in view of Louis U.S. Patent 5,212,473 and in further view of Simon et al. U.S. Patent 6,002,392.

Regarding claim 10, as mentioned above, Azima in view of Louis teaches the apparatus as claimed in claim 10, except wherein the panel also functions as a microphone. Azima discloses that the apparatus claimed in claim 1 can be used in many applications such as ATM machine, vending machines etc.

Simon et al. also discloses an ATM machine, which includes a microphone as an input device (column 1, lines 31-40), so that users would be able to communicate with the bank teller through said microphone.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a microphone to the panel of the apparatus (ATM machine) disclosed by Azima in view of Louis, as evidenced by Simon et al. so that the users would be able to use said microphone as an input device.

Regarding claim 11, Simon et al. also discloses a camera located behind the panel of said ATM machine for receiving visual information. One skilled in the art would recognize that a camera has been used for capturing one frame of picture at one time and a video camera has been used to capturing continuous frames of pictures. In fact, all most all ATM machines have been equipped with a video camera for security surveillance .

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a video camera to the apparatus (ATM machine) disclosed by Azima in view of Louis, as evidenced by Simon et al., for surveillance purpose.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q Dang whose telephone number is (571) 272-3069. The examiner can normally be reached on 9:30AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HD

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
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